

BOOK REVIEWS

BIBLIOGRAPHY OF SOUTH AFRICAN BOTANY (UP TO 1951), by A. A. Bullock, edited by O. A. Leistner with pp. iii, 1-194. Flora of Southern Africa. Government Printer, Pretoria, 1978. Limp cover R4,50 (R5,50 abroad).

A. A. Bullock's *Bibliography of South African Botany (up to 1951)* is another part in the *Flora of Southern Africa* series. The compiler certainly cast his net wide when setting out on this mammoth venture, for physiological, biographical, geological, historical, anatomical and palaeobotanical, as well as the expected taxonomic references to Gymnosperms, Angiosperms, Pteridophytes and Bryophytes, are included. There are two parts; an author index and a taxonomic index, covering literature published up to 1951. Although no starting date is mentioned, it seems that most (but by no means all) the pre-Linnaean writings on South Africa flora are included. Obviously there are gaps as the author probably never set out to produce a wholly complete work, but there are also some curiously irrelevant entries such as "E. E. M. Loock, 1947, *Eucalyptus* species suitable for the production of honey in South Africa." Does such a paper really have any bearing on South African botany? Nevertheless, this is going to be an exceptionally useful reference work, especially to taxonomists.

It is now almost a hundred years since MacOwan and Bolus published their *Catalogue of Printed Books and Papers relating to South Africa*. (Pt. 1, Botany, 1882). Bullock's work takes over from there as a worthy successor and I have no doubt that those who are wise enough to purchase this most reasonably priced book will find their copies well thumbed ere long.

J. P. ROURKE

GREENHOUSE MANAGEMENT, by J. J. Hanan, W. D. Holley and K. L. Goldsberry, with pp. xiv + 530, 283 figures and 117 tables. ISBN 3-540-08478-9. Berlin-Heidelberg-New York: Springer-Verlag, 1978. Volume 5 in the Advanced Series in Agricultural Sciences, co-ordinating editor B. Yaron. Cloth DM 94, US \$47.00.

The book is bound neatly in a hard cover of 170 × 250 mm in size. Good quality paper is used and the letter printing is of a high standard. Unfortunately many of the photographic prints are rather poor which detracts from the overall appearance of the book and is not expected from a book in this price class.

The subject of greenhouse management is presented in 12 chapters. After a short introductory chapter, dealing amongst other things with the size of the greenhouse industry, world wide, a whole chapter is devoted to the subject of light. This subject is treated in an excellent manner. After discussing the characteristics of light and solar energy the principles and practices of supplemental irradiation are covered.

The third chapter is devoted entirely to greenhouse construction. This aspect is covered in great length and detail. Some aspects are possibly treated in too great a detail and figures giving specifications for items such as types and lengths of nails could have been omitted. The following 7 chapters deal with the factors affecting plant growth and production in the following order: temperature, water, soils and soilmixtures, nutrition, carbondioxide and pollution, insect and disease control, and chemical growth regulation. These chapters are well written, maintaining a proper balance between theory and application. Tables, figures

and plates are used with discretion to further explain the text. All statements are substantiated by reference to original research papers. Special mention should be made of the extensive list of references at the end of each chapter, many of which are difficult to obtain in a library. To round off the subject of greenhouse management the last two chapters are dealing with business management and marketing.

A number of printing errors were noted; for example the page reference in the index under 4.4 Cooling of Greenhouses should be 175 and not 157, the y-axis for Fig. 3.29 and 3.30 are omitted while there are no dimensions stated on the y-axis for Fig. 3.31.

Despite the few points of criticism the authors succeeded very well in integrating relevant parts of three different disciplines, i.e. biology, engineering and economics. It is possibly the best book in its class today. The book has world-wide application and although principally aimed at the professional horticulturist it can be used to great advantage by students in advanced courses in horticulture.

G. JACOBS

MEDICINAL PLANTS OF WEST AFRICA, by Edward S. Ayensu with pp. 330. Michigan, Reference Publications, Inc., August 1978. US \$29.95.

This is a pleasantly produced book of manageable size and clear print, together with 127 monochrome illustrations of difference species and of varying quality. Included is a glossary of medical terms, though I must admit never to have heard of alexiteric, antipsoric, acrochordon or bechic (from the first double page only); nor antilith, but I rather like that one. Then follows a bibliography, which I imagine is reasonably exhaustive of the subject, a very adequate medicinal index and a species index. The text is arranged in alphabetical order of families—as in Watt and Breyer-Brandwijk's larger book on Southern and Eastern Africa. Both books include the native names but there the resemblance ends, for the present volume follows a set pattern; for each species the countries where it is used are listed, together with its local names, followed by lists of disorders treated. There is no description or discussion of evidence, true value, popularity or any toxic properties. As an example, Diabetes Mellitus appears in the index under 5 species: (1) Leaf of *Bridelia ferruginea* (tea), (2) *Costus schlechteri*, "part not cited", (3) *Musa sapientum* ("unripe fruit, with other drugs"), and so on.

There is no doubt that potent medicines derived from plants are still to be discovered [consider the fairly recent *Rauvolfia* alkaloids, vincoblastin from *Vinca* spp. and steroids from diosgenin (*Dioscorea* spp.)] but I cannot see how this book is going to be of much help except as a catalogue. In fact a catalogue, large and probably accurate, is what it is and, as far as I can judge, it contains no original work but relies entirely on the works quoted in the bibliography.

The author is himself a Ghanian, a botanist of world renown and now Director of Endangered Species Program at the Smithsonian Institute. He is thus well able to judge the accuracy of his sources. The book is essentially for reference and includes few South African species, (eg. *Abrus precatorius*, *Kigelia africana*) though many genera that are represented here also (eg. *Acacia*, *Adenia*, *Albizia*, *Amaranthus*, *Asparagus*, etc.).

This work fills a gap and shows great industry but will probably be necessary only to the large libraries and research workers in this field.

W. P. U. JACKSON

THEORIES AND TECHNIQUES IN VEGETATION ANALYSIS, by R. E. Randall with pp. 61 and illustrations. Oxford University Press, 1978. R4,16.

This slim volume is one of the titles in the series "Theory and practise in geography" and thus the topics included are limited to those of interest to the geographer. These topics could have formed the basis of a valuable text but Randall's attempt at a synthesis is unimpressive.

The author has used a very poor system of subdivisions and therefore the reader is unable to rapidly identify specific topics. For example cover and frequency are discussed in their own sections whereas density is discussed under "types of data-estimations". Permanent plots are briefly mentioned under "Transects". Why does the author not use more generally accepted terms as headings? For example, why not use "Polythetic" instead, of "Fusion"; "Floristic approaches" instead of "Species characteristics". The poor subdivisions are not aided by the absence of an index. The reference list is hardly adequate. 25 of the approximately 180 references are from the 1970s and then 5 of these 25 are publications by the present author. The two most recent publications (1976) are both by the present author.

This book appears to be aimed at undergraduates and yet it often presupposes knowledge of vegetation science. For example (1) in Chapter 3 concepts are introduced without clarification (synecology, continuum, ordination), (2) Figs 4 and 5 have very poor captions (I would think that Fig. 5 is especially meaningless to any undergraduate) and (3) in describing the Zurich-Montpellier method the author states that subjective weightings are given to each plant (nowhere has the author mentioned what this subjective weighting is, and he has not described the Braun-Blanquet cover-abundance scale). It would be possible to cite numerous other examples.

Chapter 2 contains a diverse range of topics (e.g. "land-use", "indicator species", "ecosystem studies", "vegetation evaluation", "pollution", "road networks" and "vegetation dissemination"), and can only be of value in knowing what topics in vegetation science are of interest to geographers. Chapter 3 is a dry treatment of the history and development of vegetation study. Numerous ideas are introduced without much clarification and numerous works are cited. Chapters 4, 5 and 6 (the theories and techniques) are the most useful sections of the book but are spoilt by the problems mentioned above, i.e. the poor subdivisions and the presupposition of a knowledge of vegetation science. The author is obviously unfamiliar with the Zurich-Montpellier technique. For example, in his description of the technique, he incorrectly states that "within each uniform area randomly chosen, several relevés are made".

The need for a slim volume on the theories and techniques in vegetation science remains.

B. M. CAMPBELL